

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 55 (Cancelled).

56. (New) A method for determining the state of a measuring field-device for process automation and process measurement technology for registering at least one process variable of a process medium, comprising the steps of:

registering at least one influencing variable influencing expected service life, or ability of the measuring field-device to function, wherein the influencing variable is not the process variable;

comparing the measured influencing variable, or a variable derived therefrom, with a predetermined maximum, or minimum, allowable value for this influencing variable or the derived variable; and

generating and issuing an alarm signal in the case of exceeding of the maximum allowable value, or in the case of subceeding, or falling beneath, the minimum allowable value, of the influencing variable or the derived variable.

57. (New) A method for determining the state of a measuring field-device for process automation and process measurement technology for registering at least one process variable of a process medium, comprising the steps of:

registering at least one influencing variable influencing expected service life of the measuring field-device, wherein the influencing variable is not the process variable;

determining probable service life of the measuring field-device, or remaining period of time until the reaching of a point in time for maintenance work, by means of a predetermined function and on the basis of the currently registered influencing variable; and

producing and issuing a report signal, which corresponds to the probable service life of the measuring field-device or the remaining period of time until the reaching of a point in time for maintenance work.

58. (New) The method as claimed in claim 56, wherein:
the alarm signal is issued by an alarm, or display, apparatus on, or in, the measuring field-device.

59. (New) The method as claimed in claim 56, wherein:
the alarm signal is issued by a corresponding apparatus from the measuring field-device onto a bus.

60. (New) The method as claimed in claim 56, wherein:
the alarm signal is retrievable by an apparatus connectable to the measuring field-device.

61. (New) The method as claimed in claim 57, wherein:
the reporting signal is issued by a display apparatus on, or in, the measuring field-device.

62. (New) The method as claimed in claim 57, wherein:
the reporting signal is issued by an apparatus from the measuring field-device onto a bus.

63. (New) The method as claimed in claim 57, wherein:
the reporting signal is retrievable by an apparatus connectable to the measuring field-device.

64. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability of the measuring field-device to function is a physical variable.

65. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability of the measuring field-device to function is a calculated variable.

66. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is a statistical variable.

67. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is temperature.

68. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is moisture.

69. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is a vibration.

70. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is a force.

71. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is a pressure inside a measuring device
housing of the measuring field-device.

72. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability
of the measuring field-device to function is a concentration of undesired gases in the
measuring device housing.

73. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability of the measuring field-device to function is the number of switch-on events of the measuring field-device.

74. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability of the measuring field-device to function is the number of voltage transients on lines connected with the measuring field-device.

75. (New) The method as claimed in claim 56, wherein:
the registered influencing variable influencing expected service life or the ability of the measuring field-device to function is the number of electrostatic discharges on the measuring field-device, its housing, or a probe or operating unit connected with the measuring field-device.

76. (New) The method as claimed in claim 56, wherein:
different influencing variables influencing expected service life or the ability of the measuring field-device to function are registered.

77. (New) The method as claimed in claim 56, wherein:
the influencing variable, or influencing variables, influencing expected service life or the ability of the measuring field-device to function are stored.

78. (New) The method as claimed in claim 76, wherein:
a plurality of currently registered influencing variables are considered for determining probable service life or the ability of the measuring field-device to function.

79. (New) The method as claimed in claim 77, wherein:
at least one currently registered, and at least one stored, influencing variable are considered for determining probable service life or ability of the measuring field-device to function.

80. (New) The method as claimed in claim 56, wherein:
the frequency of the alarm signals in a certain period of time is considered for determining probable service life or ability of the measuring field-device to function.

81. (New) The method as claimed in claim 77, wherein:
extreme values of the current and stored influencing variables and/or their frequency in a certain period of time are considered for determining probable service life or ability of the measuring field-device to function.

82. (New) The method as claimed in claim 78, wherein:
the stored influencing variables are subjected to a trend analysis and that a remaining period of time until the reaching of a predetermined, probable service life of the measuring field-device is determined and output for determining probable service life or ability of the measuring field-device to function.

83. (New) The method as claimed in claim 57, wherein:
the issued reporting signal contains information concerning a remaining period of time until the reaching of a point in time for maintenance work on a module or component of the measuring field-device or for a predicted replacement of the module or component.

84. (New) A measuring field-device for process automation and process measurement technology and for registering at least one process variable of a process medium, comprising:

- a measuring device housing with electronics accommodated therein;
- a mechanism for registering an influencing variable influencing expected service life, or the ability of the measuring field-device, or a part, or module thereof, to function, wherein the influencing variable is not the process variable;
- a mechanism for comparing the measured influencing variable, or a variable derived therefrom, with a predetermined maximum, or minimum, allowable value for this influencing variable or the derived variable; and
- a mechanism for generating and issuing an alarm signal in the case of exceeding

the maximum allowable value, or in the case of subceeding, or falling beneath, the minimum allowable value, of the influencing variable or the derived variable.

85. (New) A measuring field device for process automation and process measurement technology and for registering at least one process variable of a process medium, comprising:

- a measuring device housing with electronics accommodated therein;

- a mechanism for registering an influencing variable influencing expected service life, or ability of the measuring field-device, or a part, or module thereof, to function, wherein the influencing variable is not the process variable;

- a mechanism for determining, by means of a predetermined function and on the basis of the currently registered influencing variable, probable service life, or remaining period of time until the reaching of a point in time for maintenance work on the measuring field-device, or a part, or module thereof; and

- a mechanism for generating and issuing a reporting signal corresponding to the probable service life, or the remaining period of time until the reaching of a point in time for maintenance work on the measuring field-device, or a part, or module thereof.

86. (New) The measuring field device as claimed in claim 84, wherein:
an alarm or display apparatus provided thereon or therein issues the alarm signal.

87. (New) The measuring field device as claimed in claim 84, wherein:
the alarm signal is issued onto a bus connected to the measuring field-device.

88. (New) The measuring field device as claimed in claim 84, further comprising:

- an apparatus, to which an external apparatus is connectable, by means of which the alarm signal can be retrieved.

89. (New) The measuring field device as claimed in claim 85, further comprising:

a display apparatus thereon or therein which issues the reporting signal.

90. (New) The measuring field device as claimed in claim 85, wherein:
said mechanism for generating and issuing a reporting signal issues the reporting signal onto a bus connected to the measuring field-device.

91. (New) The measuring field device as claimed in claim 85, further comprising:

an apparatus, to which an external apparatus is connectable, by means of which the reporting signal can be retrieved.

92. (New) The measuring field device as claimed in claim 84, further comprising:

at least one additional sensor or transducer for registering a physical variable, which is the influencing variable influencing the expected service life or ability of the measuring field-device to function.

93. (New) The measuring field device as claimed in claim 84, wherein:
the influencing variable influencing the expected service life, or the ability of the measuring field-device to function, is calculated.

94. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a temperature.

95. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a moisture.

96. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a vibration.

97. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a force.

98. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a pressure inside the measuring
device housing of the measuring field-device.

99. (New) The measuring field-device as claimed in claim 92, wherein:
said additional sensor or transducer registers a concentration of undesired gases
in the measuring device housing.

100. (New) The measuring field-device as claimed in claim 84, wherein;
said mechanism for registering registers the number of switch-on events of the
measuring field-device and takes such into consideration as an influencing variable on
expected service life or the ability of the measuring field-device to function.

101. (New) The measuring field-device as claimed in claim 84, wherein:
said mechanism for registering registers voltage transients on lines electrically
connected with it and takes such into consideration as an influencing variable on
expected service life or the ability of the measuring field-device to function.

102. (New) The measuring field-device as claimed in claim 84, wherein:
said mechanism for registering registers electrostatic discharges on the
measuring field device, its housing or a probe or operating unit connected with it and
takes such into consideration as an influencing variable on expected service life or the
functional ability.

103. (New) The measuring field-device as claimed in claim 92, wherein:
different influencing variables influencing expected service life, or the ability of
the measuring field-device to function, are registered.

104. (New) The measuring field-device as claimed in claim 84, wherein:
said mechanism for registering includes a memory, wherein a currently registered influencing variable, or variables, influencing expected service life, or ability of the measuring field-device to function, is/are stored.

105. (New) The measuring field-device as claimed in claim 103, wherein:
a plurality of currently registered influencing variables are considered for determining probable service life or ability of the measuring field-device to function.

106. (New) The measuring field device as claimed in claim 104, wherein:
at least one currently registered, and at least one stored, influencing variable are considered for determining probable service life or ability of the measuring field-device to function.

107. (New) The measuring field-device as claimed in claim 84, wherein:
the frequency of alarm signals within a certain period of time period are considered for determining probable service life or ability of the measuring field-device to function.

108. (New) The measuring field-device as claimed in claim 104, wherein:
extreme values of current and/or stored, influencing variables and/or their frequency within a certain period of time are considered for determining probable service life or ability of the measuring field-device to function.

109. (New) Measuring field-device as claimed in claim 104, wherein:
for determining probable service life or ability of the measuring field-device to function, stored influencing variables are subjected to a trend analysis and a remaining period of time until the reaching of a predetermined probable service life of the measuring field-device is determined and output.

110. (New) Measuring field-device as claimed in claim 85, wherein:

the issued reporting signal contains information concerning a remaining period of time until the reaching of a point in time for maintenance work on a module or component of the measuring field-device or concerning a probable replacement of the module or component.